THE NAUTILUS.

VOL. XXIV. SEPTEMBER, 1910. No. 5

SOME NOTES ON THE OLIVIDAE.

BY CHARLES W. JOHNSON.

I.

Perhaps no group of shells presents such a great variation of color as occurs in many species of the genus Oliva. In trying to define the true relative position of the various forms, two conditions act as impediments—the confusion in nomenclature and the lack of positive localities for the species. Localities for species are frequently cited which are undoubtedly erroneous. That many of the forms represent only local races is apparent from the fact that where specimens have a positive habitat within the range of a species, there is as a rule an apparent uniformity of the specimens which readily distinguishes them from others. This can perhaps be reasonably accounted for when we take into consideration their distribution and habits. Chiefly tropical and living on the sandy shores and bars of the more sheltered and shallow waters of the gulfs and bays, their distribution is necessarily restricted, thus creating environmental conditions, favorable for numerous local variations. The necessity for studying the species faunologically is therefore evident, and if monographers had done so, a much clearer idea of the relationship of species and the range of specific variation would have been attained.

Tryon's views as to synonomy are most excellent, the chief fault of his work being his disregard of priority, even of the Lamarckian species. The excellent and numerous figures by Marrat (Sowerby's Thesaurus Conchyliorum, vol. iv) illustrate practically all important

variations, which was the author's intention rather than to define the species, although many of these are treated as species. His species credited to Martini and Meuschen will have to be ignored, but those of Bolten will stand.

I have been led to write these notes in connection with my attempt to list the collection of the late John Ford. In making comparative studies I have also used the collection of the Boston Society of Natural History, thus having large series of all the more variable species. With the combined collections, I have before me over 250 specimens referable to the following species and varieties.

Oliva sericea (Bolten).

Porphyria sericea Bolten, Mus. Boltenianum, p. 33, 1798.

Oliva textilina Lam., Ann. du Mus., p. 309, 1810. Bolton's and Lamarck's species are both based upon the same recognizable figure by Martini (Conch. Cab. II, tab. 51, fig. 559). Bolton's being the first name proposed will have to be adopted, as was done by Marrat. Why Tryon should have chosen the doubtful *irisans* described on page 310 instead of *textilina* on page 309, making the latter a variety of the former is hard to understand. Lamarck's first figure referring to *irisans* is that of Martini (Conch. Cab., fig. 561). He again refers to the same figure under *reticularis* (Ann. du Mus., xvi, p. 314). Bolten refers to the same figure (561) as a second example of *sericea*, evidently considering it the young of that species. One feels doubtful as to the identity of this figure; unbiased I should have referred it to a light-colored *sanguinolenta*. The second figures referred to by Lamarck are those given by Chemnitz (Conch. Cab., x, tab. 147, figs. 1371, 1372). This reference is followed by a question mark. The latter figures certainly do not belong to this variable species, but possibly to a form of *elegans*. Both Weinkauff and Marrat seem to have selected the callous spired forms of *zeilanica* as the representative of Lamarck's *irisans*. As the callus spire is not mentioned in the original description or shown in the figures referred to, they are evidently in error, as was pointed out by Ford when describing *cryptospira* (Proc. Acad. Nat. Sci., 1891, p. 98).

It is probable that the progenitor of all the forms of this variable species is *tremulina* from which diverge three well-marked varieties with a number of parallel variations connected by intermediate forms, but the rules of priority compel the adoption of one of the extreme variations.

Variety *tremulina* Lamarck.

Oliva tremulina Lam., Ann. du Mus., XVI, p. 310, 1810.

This is well shown by Marrat on plate 8, fig. 117. It is in every respect like *miniacea* except that the aperture is white or bluish white; *fumosa* Marr. is only a dark form. The var. *pica* Lam. (*nobilis* Reeve + *concinna* Marr.) is more or less coarsely and irregularly marked with dark brown, but forms are before me representing all intermediate stages between *tremulina* and the var. *tenebrosa* Marr. in which the dark brown covers the entire shell.

Variety *miniacea* (Bolten).

Porphyria miniacea Bolten, Mus. Boltenianum, p. 33, 1798.

Oliva erythrostoma Lam., Ann. du Mus., XVI, p. 309, 1810.

Both authors again refer to the same figures by Martini (Conch. Cab., II, tab. 45, figs. 476, 477). Distinguished from *tremulina* in having the aperture a bright orange red. Intermediate forms connect it with a uniform dark brown form similar to *tenebrosa*, see Thes. Conch., IV, pl. 7, fig. 109 (var. *marrati* n. var.). On the other hand the shells become gradually lighter in color and abnormally thickened, representing the var. *ponderosa* Duclos. The latter seems to be the characteristic form of Mauritius and adjacent islands.

Variety *zeilanica* Lamarck.

Oliva zeilanica Lam., Anim. sans Vert.; VII, p. 436, 1822.

This represents a smaller race quite readily separated in the adult but completely connected with *tremulina* in younger specimens. In other words it does not go beyond this juvenile appearance even in the adult. This view is strengthened by the fact that it also shows a parallel variation in color. There is however a variation which is apparently peculiar to this race, which consists of the spire in the adult becoming covered by a callus. Three specimens that would otherwise be typical *zeilanica* show this feature. This gradually merges into a lighter colored form, often with a violet-colored aperture constituting the var. *ornata* Marr. A light yellow form with only a slight trace of the markings constitutes the var. *cryptospira* Ford, which merges into a dark brown form resembling *tenebrosa*, see Thes. Conch., IV, pl. 9, fig. 126 (var. *fordi* n. var.). These varietal names are given merely for convenience in referring to these extreme forms.